



(12) **United States Patent**
Fukuoka

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- (54) **DIGITAL IMAGE CAPTURING DEVICE
HAVING AN INPUT/OUTPUT INTERFACE
THROUGH WHICH THE DEVICE IS
CONTROLLED**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

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(57) **ABSTRACT**

A digital image capturing device which communicates through an input/output interface with an external processing device which monitors and/or controls the camera. The image capturing device communicates with the external device in order to output status information to the external device, receive commands from the external device and to transfer images and sound between the image capturing device and the external device. Various parameters describing the state of the image capturing device are transmitted to the external device including characteristics of the captured images, whether the flash is ready, the state of the device battery, whether the memory is full, or the parameters used when capturing images. The commands which can be sent from the external device to the image capturing device include commands to change any of the parameters of the image capturing device and a command to capture an image or a series of images, and whether or not sound is recorded.

19 Claims, 12 Drawing Sheets

Related U.S. Application Data

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- (63) Continuation of application No. 08/535,562, filed on Sep. 28, 1995, now Pat. No. 6,104,430.

(30) **Foreign Application Priority Data**

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- (51) **Int. Cl.**⁷ **H04N 5/76; H04N 7/00**
(52) **U.S. Cl.** **348/232; 348/222; 348/233;**
348/552; 358/906; 396/321
(58) **Field of Search** **358/906, 909.1;**
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103, 115; H04N 7/00, 5/76, 5/225

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